



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
OREGON OPERATIONS OFFICE
805 SW Broadway, Suite 500
Portland, Oregon 97205

September 27, 2010

Mr. Bob Wyatt
Northwest Natural & Co-Chairman, Lower Willamette Group
220 Northwest Second Avenue
Portland, OR 97209

Re: Portland Harbor Superfund Site; Administrative Order on Consent for Remedial
Investigation and Feasibility Study; Docket No. CERCLA-10-2001-0240
EPA Comments on Benthic Risk Evaluation

Dear Mr. Wyatt:

Attached are EPA's comments on the Benthic Risk Evaluation for the Portland Harbor Site. This evaluation focuses on the evaluation of benthic risk through sediment toxicity testing and related lines of evidence for evaluating risk to the benthic community. Related lines of evidence include the two benthic predictive models – the logistic regression model (LRM) and floating percentile model (FPM) – and the application of generic sediment quality guidelines (SQGs). These comments are based on our review of the Draft Baseline Ecological Risk Assessment (Sections 6.1 – 6.3; Section 6.7; and Attachments 6 and 7), the Benthic Toxicity Reanalysis Technical Memorandum and the Site Specific SQGs Based on Individual Bioassay Endpoints.

As stated in our April 21, 2009 letter regarding Preliminary Remediation Goals for the Portland Harbor site, EPA expects that sediment bioassays will be the primary line of evidence for evaluating risks to the benthic community. Related lines of evidence such as the FPM, LRM and generic SQGs will be useful not only as lines of evidence (LOE) in the baseline ecological risk assessment (BERA) but also to support the development of cleanup goals in the Portland Harbor feasibility study (FS). As a result, it is inappropriate to eliminate these supporting lines of evidence from the draft BERA. Rather, the weight of evidence evaluation (WOE) in the BERA should weight each LOE as high, medium or low and present the results of the WOE in the uncertainty analysis section of the revised BERA. EPA comments on the appropriate reliability analysis should be incorporated into this evaluation.

In addition to our comments on the elimination of various LOE from the draft BERA, the interpretation of sediment bioassays is inconsistent with EPA's Problem Formulation. All four bioassay endpoints (Hyalella biomass and survival; Chironomus biomass and survival) must be used to identify toxicity. In addition, sediment samples with Level 1, Level 2 and Level 3 response rates should be designated as toxic in the BERA, in accordance with USEPA guidance and classified as low, moderate and high toxicity as specified in MacDonald Landrum (2008).

Finally, the reference envelope must be calculated according to the EPA 2009 procedure described in the Benthic Toxicity Reanalysis Technical Memorandum.

Regarding the Logistic Regression Model, an updated model has been developed by Jay Field of NOAA. The updated model relies on a series of grain size and organic carbon normalizations to improve model performance. A memo summarizing the updated LRM and a series of tables is attached to these comments. Maps depicting sediment chemistry samples with probability of toxicity greater than 50% and 75% have also been developed. Due to the large file size, these maps have been placed on a ftp site for downloading.

EPA expects the attached comments on the benthic risk evaluation to be incorporated into a revised BERA. Consistent with our April 21, 2010 PRG letter, the results of the revised benthic risk evaluation should be used to support the development of cleanup goals protective of the benthic community. A meeting to discuss approaches for considering multiple lines of evidence for assessing benthic risk is scheduled for September 29, 2010. EPA looks forward to discussing this further at that time.

If you have any questions this matter, please contact Chip Humphrey at (503) 326-2678 or Eric Blischke (503) 326-4006. All legal inquiries should be directed to Lori Cora at (206) 553-1115.

Sincerely,

Chip Humphrey
Eric Blischke
Remedial Project Managers

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